OPTIMUM®
MASCHINEN - GERMANY

Safety instructions

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Appendix

# Operating manual

Version 1.01

## Collet lathe chuck

## DIN ISO 702-2 ( Camlock )

Item no.
3441554 | 3441555 | 3441556 | 3441558

for collets type 5C / 385E
(Scope of delivery without collets)

# 1 Safety instructions

## 1.1 Intended use

The collet chuck is designed exclusively for manual clamping of workpieces using collets of type 385E (5C). The collet chuck is suitable for rotating use in lathes.

## 1.2 Reasonably foreseeable misuses

Any use other than that specified under "Intended use" or any use beyond that described will be deemed non-intended use and is not permissible.

Any other use must be discussed with the manufacturer.

In order to avoid misuse, it is necessary to read and understand the operating instructions before the first commissioning.

The operators must be qualified.

### 1.2.1 Avoidance of misapplication

The following misapplications are possible with the collet chuck:

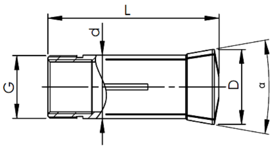
- Use of the collet chuck for clamping unsuitable materials.
- Use of the collet chuck with missing or damaged components.
- Use of the collet chuck as a load handling device, e.g. as a gripper.
- Use of the collet chuck with non-matching collets.
- Rotation with the workpiece inserted but not clamped.
- Clamping of workpieces with strong unbalance.
- Direct a jet of coolant or compressed air at the collet or guide groove.
- No hand protection may be worn during operation of the collet chuck! Hand protection is only to be worn for transport, assembly, maintenance and as long as the machine and collet chuck are stationary.

# 2 Technical specification

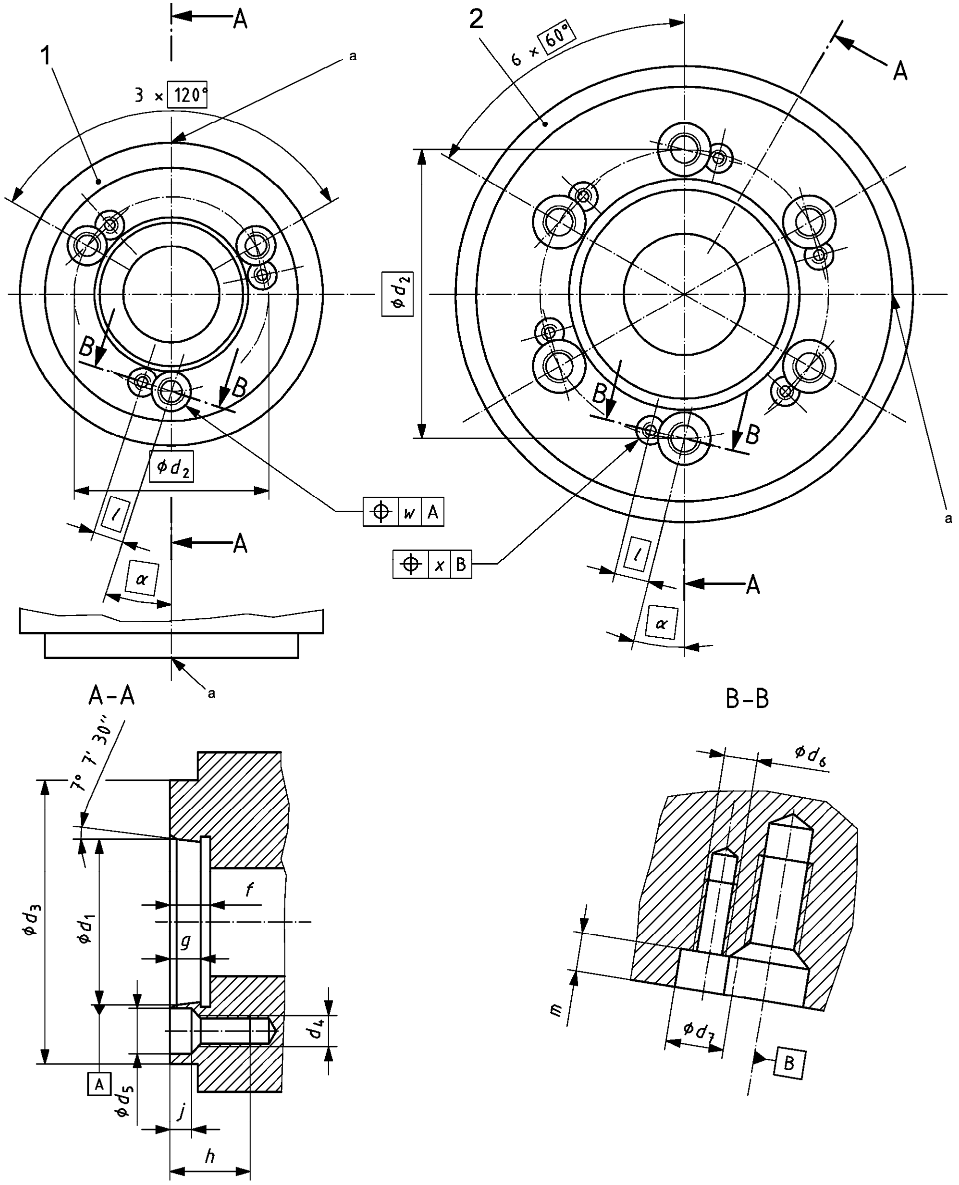
## 2.1 Maximum Spindlespeed

The maximum speed of the collet chuck is 5000 rpm.

## 2.2 Collet chuck ISO 702-2 - Camlock spindle fixing

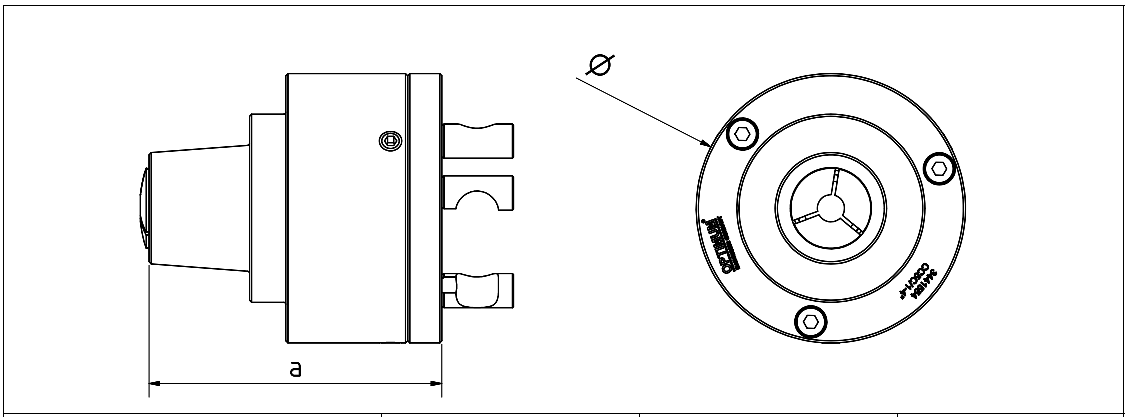
| Collet type to be used | | |
|---|---|---|
| 385E (5C) , DIN 6341<br><br> | 385E (5C) , DIN 6341<br>G = 26.45 x 1/24"<br>d = 31.75<br>D = 37.5<br>L = 89<br>20° | |
| | | Item |
| Camlock direct fixing | DIN ISO 702-2 - Size no. 4 | 3441554 |
| Camlock direct fixing | DIN ISO 702-2 - Size no. 5 | 3441555 |
| Camlock direct fixing | DIN ISO 702-2 - Size no. 6 | 3441556 |
| Camlock direct fixing | DIN ISO 702-2 - Size no. 8 | 3441558 |
| Repeat accuracy in concentricity (adjustable) | 0.02 mm | |

### 2.2.1 Camlock direct mount flange dimensions



| Measure | Size no. | | | |
|---|---|---|---|---|
| | 4 | 5 | 6 | 8 |
| $d_1$ | 63.513 | 82.563 | 106.375 | 139.719 |
| $d_2$ | 82.6 | 104.8 | 133.4 | 171.4 |
| $d_3$ | 117 | 146 | 181 | 225 |
| $d_4$ | M10 × 1 | M12 × 1 | M16 × 1,5 | M20 × 1,5 |
| $d_5$ | 16.2 | 19.4 | 22.6 | 25.8 |
| $d_6$ | M6 | M6 | M8 | M8 |
| $d_7$ | 10.5 | 10.5 | 13.5 | 13.5 |
| g | 10 | 12 | 13 | 14 |
| h | 28 | 30 | 35 | 38 |
| j | 8 | 8 | 9.5 | 9.5 |
| l | 11.0 | 12.5 | 15.5 | 17.5 |
| m | 7 | 7 | 9 | 9 |
| w | 0.15 | 0.2 | 0.2 | 0.2 |
| x | 0.2 | 0.2 | 0.2 | 0.2 |
| α | 15° 36' | 14° 55' | 13° 46' | 12° 18' |

### 2.2.2 Dimensions



| | a | Ø | |
|---|---|---|---|
| Size no. 4 | 71 mm | 126 mm | 3441554 |
| Size no. 5 | 107.4 mm | 126 mm | 3441555 |
| Size no. 6 | 160 mm | 182 mm | 3441556 |
| Size no. 8 | 163 mm | 225 mm | 3441558 |

### 2.2.3 Environmental and operating conditions

Soiling of the surroundings within the scope of the soiling emanating from the machine itself is permissible. However, the proper functioning of the collet chuck must be ensured, checked regularly and the collet chuck must be cleaned regularly and greased by hand inside the thread. Soiling, insufficient cleaning and sluggishness due to insufficient greasing can reduce the clamping force of the collets by up to 50%.

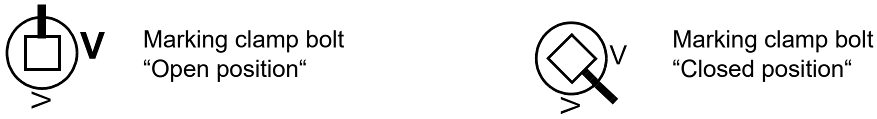
# 3 Assembly

## 3.1 Assembly of the manual chuck

Attach the collet chuck to the spindle of the lathe. Ensure the correct clamping position of the clamping bolts on your spindle fixture. After the collet chuck has been correctly attached to the lathe, the concentricity of the collet chuck is checked with a dial gauge and corrected if necessary.

➜ Fasten the workpiece holder by turning the clamping bolts clockwise.

The right clamp position is reached when the reference marker at the clamp holder are between the two marks at the lead spindle seat.



Marking clamp bolt
“Open position“

Marking clamp bolt
“Closed position“

Img.3-1: Camlock clamp bolt markings

## 3.2 Adjusting the Camlock bolts on collet chuck

Insert all of the bolts in the screwed flange of the chuck, until the reference mark, the circular reference line (F) is in line with the wall of the chuck flange surface and the semicircular grooves are in line with the holes of the safety screw (E).

➜ Fit the safety screw (E) into each bolt and tighten.

➜ Make sure that the two contact sides (plate and shaft) are free from impurities.

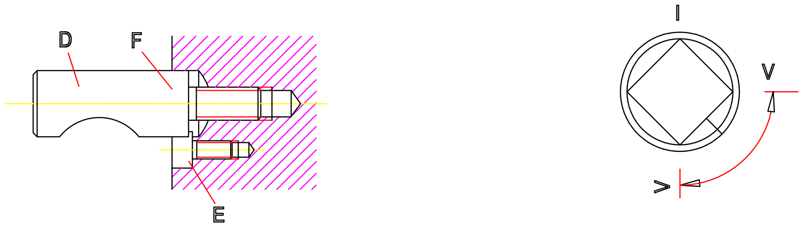
Now the chuck can be mounted.

Before coupling the chuck to the shaft nose, check that the clamp bolts are in an unlocked position.

➜ Fasten the workpiece holder by turning the clamping bolts clockwise.

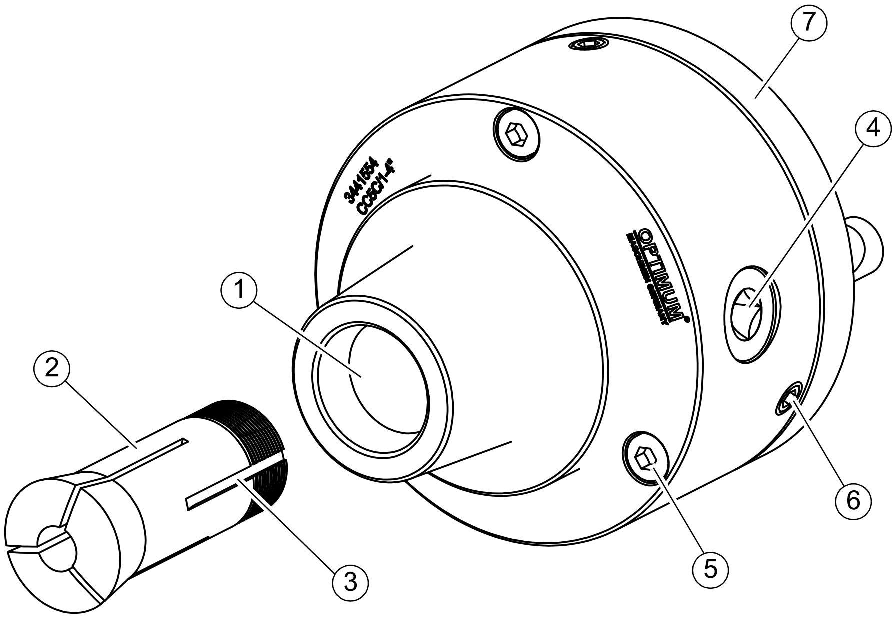
**INFORMATION**

**The reference mark (F) on each Camlock bolt serves as orientation for the correct adjustment.**



Img. 3-2: Camlock fastening

## 3.3 Correction of the concentricity



| Pos. | Designation | Pos. | Designation |
|---|---|---|---|
| 1 | Collet holder | 2 | Collet 385E (5C) |
| 3 | Collet guide groove | 4 | Square for chuck spanner |
| 5 | 3 x fastening screw mounting flange | 6 | 3 x stud bolt for concentricity alignment |
| 7 | Camlock mounting flange | | |

In principle, the collet chuck is always fastened in the same position on the lathe in order to eliminate any possible run-out errors of the lathe spindle.

The concentricity of the collet chuck is adjusted by loosening the fastening screws (5) slightly and then adjusting the position of the chuck on the mounting flange (7) with the aid of the stud bolts (6). Then tighten the fastening screws (5) again.

# 4 Appendix

## 4.1 Liability claims/warranty

Besides the legal liability claims for defects of the customer towards the seller, the manufacturer of the product, OPTIMUM GmbH, Robert-Pfleger-Straße 26, D-96103 Hallstadt, does not grant any further warranties unless they are listed below or were promised as part of a single contractual provision.

- Liability or warranty claims are processed at OPTIMUM GmbH's discretion either directly or through one of its dealers.
  Any defective products or components of such products will either be repaired or replaced by components which are free from defects. Ownership of replaced products or components is transferred to OPTIMUM Maschinen Germany GmbH.
- The automatically generated original proof of purchase which shows the date of purchase, the type of machine and the serial number, if applicable, is the precondition in order to assert liability or warranty claims. If the original proof of purchase is not presented, we are not able to perform any services.
- Defects resulting from the following circumstances are excluded from liability and warranty claims:
  - Using the product beyond the technical options and proper use, in particular due to over-straining of the machine.
  - Self-inflicted damage due to incorrect operation or disregard of our operating instructions
  - Inattentive or incorrect handling and use of improper equipment
  - Unauthorized modifications and repairs
  - Insufficient installation and safeguarding of the machine
  - Disregarding the installation requirements and conditions of use
  - atmospheric discharges, overvoltage and lightning strokes as well as chemical influences
- Neither are the following items covered by liability or warranty claims:
  - Wearing parts and components which are subject to normal and intended wear, such as V-belts, ball bearings, lighting, filters, seals, etc.
  - Non reproducible software errors
- Any services, which OPTIMUM GmbH or one of its agents performs in order to fulfil any additional warranty are neither an acceptance of the defects nor an acceptance of its obligation to compensate. These services neither delay nor interrupt the warranty period.
- The court of jurisdiction for legal disputes between businessmen is Bamberg.
- If any of the aforementioned agreements is totally or partially inoperative and/or invalid, a provision which nearest approaches the intent of the guarantor and remains within the framework of the limits of liability and warranty which are specified by this contract is deemed agreed.

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